

Bring Home the Green

Integrated pest management (IPM) emphasizes pest prevention and nature-oriented techniques. IPM reinforces our vision of a California where pest management is safe, effective and contributes to a healthy environment. Toward those goals, DPR works with local government and schools to promote IPM programs. We award grants to promote reduced-risk practices on the farm and in urban areas, and we honor innovative organizations that share our vision.

Marin Center a landmark of design... and pest management

Frank Lloyd Wright's architecture was rooted in nature. He called it "organic architecture" and advised his students to "study nature, love nature, stay close to nature."

The Marin County Civic Center is Wright's largest building and one of his last, completed in 1962. He believed that a building and its natural setting should be so well integrated that together they appear to be a single entity, with a seamless transition between interior and exterior spaces. This approach, however, along with many of Wright's unusual architectural features, introduced some uncommon challenges for the building's pest managers. So challenging, in fact, that

DPR has used the Civic Center for several IPM training sessions, including a session for the U.S. Environmental Protection Agency.

Marin County had taken a traditional approach to pest control – focusing on routine pesticide applications – until the county's 1999 adoption of an ordinance banning the most hazardous pesticides in public buildings and mandating a 75 percent decrease in overall pesticide use. The ordinance also required that building managers employ IPM, which relies on preventing pests through exclusion (keeping pests out) and sanitation (eliminating the food, water and shelter pests need).



That was no small feat since thousands of people use the building every year. As a result, the Civic Center's pest managers have learned to balance historic preservation and daily business demands with inventive IPM practices. The building's elaborate arched entry is open; the grillwork doors don't fully control access. That created a unique pest management challenge when a fox was discovered wandering around the third floor one night. Netting placed at the entries after-hours was the solution.

Gold spheres outline the interior and exterior rooflines. During rainy weather, the roof leaked and water pooled up and drained into the spheres, leaving them moldy. The solution? Small drainage holes drilled through the bottom of the spheres.

Pigeon problem

Pigeons loved to roost in Wright's modernistic lighting fixtures. Spikes glued to the tops now keep the birds away.

Because the Civic Center is built into and connects the hillsides, the long buildings are, as Wright would say, "married to the ground." Surrounded by vegetation, it's not unusual for offices to have infestations of field cockroaches, spiders, rodents and fleas from deer. Prevention is the key. For example, gardeners removed ivy growing on the slopes that provided a home for rats, and installed owl boxes to encourage predation.

The elaborate grillwork, accents and appliques on the balconies and elsewhere are ideal habitat for spiders and other pests, and must be cleaned regularly to keep pest populations down. The long, narrow structures, by necessity, have many openings for electrical wiring. Without strict maintenance of the seals around the conduits, pests could find an easy way inside.

Atrium pests

Among the building's most dramatic features are atriums that run down the center of each wing. In keeping with his dictum to "go to nature every day for inspiration in the day's work," Wright brought nature indoors with atrium plantings of ivy, bromeliads, anthurium, schefflera, pothos, hibiscus and bird-of-paradise. The airy, sky-lit plantings, while visually dramatic, were home to infestations of mealybugs and spider mites until brought under control with a least-toxic approach, using horticultural oil. Similarly, German cockroaches found living under the plastic liner of the atrium planters were eliminated with targeted use of boric acid.

Skylights above the atriums have small holes that allow hot air to escape – and insects to fly in. Screens could be installed, but the maintenance staff works hard to balance preservation of the building's architectural quirks when considering modifications to prevent pests. A key difference between IPM and traditional pest control is that rather than

automatically spraying every month or so, IPM uses "thresholds" to trigger action. The idea is that most pests can be tolerated at some low level, and below that level (or threshold), no action may be taken, while monitoring and evaluation continue. At the Civic Center, there have been few complaints about the flying insects, so the county has not reached the threshold where screens or baits are needed.

Scrubbing, sealing

The cafeteria, on the other hand, like any food service establishment, has a zero tolerance for cockroaches and other bacteria-carrying pests. Until the Civic Center adopted its IPM program, there were so many cockroaches in the restaurant that workers were reluctant to eat there. Organophosphate insecticides were sprayed and fogged every three months, but the roaches always came back.

The first traps set up to gauge the extent of the problem collected more than 600 roaches. Preventing access was key, so the cafeteria was scrubbed from top to bottom and all openings sealed. Today, the cafeteria has eliminated the use of liquid and aerosol pesticides – and the roaches are gone. Instead of spraying, the cafeteria relies on reduced-risk products such as baits and traps, and routine monitoring to make sure pests haven't returned.

Organic buildings are the strength and lightness of the spiders' spinning, buildings qualified by light, bred by native character to environment, married to the ground. – Frank Lloyd Wright

The outside of any building may now come inside and the inside go outside, each seems as part of the other.

FRANK LLOYD WRIGHT (1867–1959)



MARY PFEIFFER
Shasta County Agricultural Commissioner

Shasta Commissioner scoring a win against weeds

Imagine disastrous grass fires fed by 30-foot-tall reeds that burn like kerosene and then regenerate for future blazes. Or alien invaders whose tough, creeping roots suck up thousands of gallons of water daily in water-parched California while choking riverbanks and destroying native habitat. These are not science fiction plots – it's the true story of *Arundo donax*. This invasive plant – also called "giant reed" – causes environmental havoc throughout the state. But in one area of California, *arundo* may have met its match.

"We're trying to nip it in the northern bud," said Shasta County Agricultural Commissioner Mary Pfeiffer. "Many agricultural commissioners have been managing weed eradication programs for decades. It's not a glamorous job, but it goes on year after year. Preventing the establishment of invasive weeds and eliminating non-native weed populations when they are small is generally the most effective approach. Pest prevention is the best method of pesticide reduction."

Shasta's *arundo* project demonstrates how early, targeted herbicide use to prevent the spread of invasive weeds is essential to protecting the environment. "Noxious and invasive weeds can have a major impact on resource lands and waterways," Pfeiffer noted, "so our strategy has always been one of early detection and rapid response."

Arundo had become established along Shasta's Stillwater Creek – a tributary of the Sacramento River. Estimated costs for a conventional eradication program ran into

hundreds of thousands of dollars. Herbicide use along 16 miles of waterway also raised regulatory, environmental and other issues.

In response, the Shasta County Weed Management Area Group joined forces with state and local agencies, civic groups and state legislative staff to attack the problem. The result: a project that maximized weed management funding of almost \$43,000 from the State Department of Food and Agriculture by using local volunteers and California Conservation Corps workers. More than \$20,000 of in-kind contributions were also received. Herbicide use was minimized with spot treatments, and the project has already improved the creek environment.

While stressing the cooperative nature of the project, Shasta *arundo* activist Randall Smith said: "Mary really went out and pushed for the state funds that made this possible. And she helped arrange for the training that allowed us to apply herbicides. All DPR regulations are followed and enforced... it's been a great partnership and an ongoing story that needs to be told."

Pfeiffer, who's served as Shasta Agricultural Commissioner since 1994, credits her staff and other local leaders, including the Rotary Club of Redding and Western Shasta Resource Conservation District, who managed the project's day to day operations. "We put a good plan together, and kept tweaking it... to see what we've all been able to do on this is just amazing."

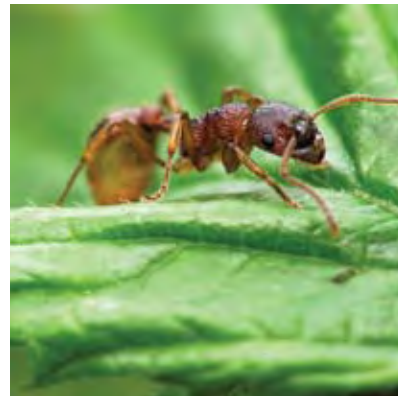


Photo: C. Barger, UGA, Bugwood.org

▲ A researcher finds himself overshadowed by a relatively small stand of *arundo*.

"We're trying to nip it in the northern bud."

Agricultural Commissioner
MARY PFEIFFER



Pest Management Alliances resume fight against farm, urban pests

The Pest Management Alliance Program has been one of DPR's most successful initiatives, developing partnerships with the private sector that promote safer, less toxic strategies with economic benefits as a bonus. Many Alliances have become self-sustaining, statewide efforts that permanently change an industry's pest management strategy for the better.

Budget cutbacks forced us to suspend Alliance grants in 2002, but with support from the Schwarzenegger Administration, the program was revived in 2008. DPR funded three Alliance projects early in the year and followed up with three more grants in December, for a total of more than \$1.1 million. These projects are closely tied to DPR regulatory priorities for the protection of air, water, agricultural and urban environments.

Almond – Aims to reduce the use of highly toxic pesticides by 25 percent at three demonstration sites. Information will be distributed

through newsletters, field days and other outreach to 3,000 growers (\$217,860 for three years).

Grape – Extends reduced-risk wine grape pest management strategies to wine, table and raisin grape growers in the San Joaquin Valley. Ten hands-on workshops, demonstration vineyards and a series of 20 educational events will help growers adopt IPM practices that reduce pesticide risks to air and water (\$183,640 for three years).

Urban pest – Seeks ant control alternatives to pyrethroid insecticides identified as a runoff hazard in urban streams. Focusing on Orange and San Diego counties, the project aims to reduce pyrethroid use among participants by 50 percent (\$183,488 for three years).

Peach – Focuses on a 20 percent cutback in the use of organophosphate insecticides used by the canning peach industry. San Joaquin Valley

growers will adopt new pest monitoring and biological control methods to achieve this goal (\$195,000 for three years).

Urban child care – Takes the IPM principles successfully applied by DPR to California schools and extends them to pest management in child care centers. Plans begin with a survey of child-care providers in the San Francisco Bay Area and development of English and Spanish-language educational materials on common pests (\$215,000 for three years).

Waterways runoff – Helps tomato, alfalfa, walnut and wine grape growers in the Sacramento-San Joaquin Delta reduce pesticide runoff up to 10 percent by 2011. The project will support a workbook of best management practices, such as pest monitoring, hedgerow plantings to increase beneficial insects, and sediment basins (\$175,000 for three years).



► BOB ELLIOTT

Environmental Scientist in Pest Management Analysis and Planning

For more than a decade, Bob Elliott, an environmental scientist in Pest Management Analysis and Planning, has been DPR's "go-to" person for IPM. He helped start up DPR's first grant program in the mid-1990s to encourage reduced-risk pest management. Later, he took over the annual IPM Innovator Awards, which recognize organizations that bring new ideas to farm fields and urban neighborhoods.

"While our IPM funding efforts have been relatively modest, as state programs go, the payoff has been tremendous," said Elliott. "You get back to using practices that minimize disruption to the natural system. Each project is unique, yet they are built on the same principles. Work with nature, not against it. Take a systems approach to the situation that considers both environment and economics. Be patient and thoughtful."

"I have especially enjoyed working with so many people in the regulated community who are true environmentalists. They talk the IPM talk, but they also walk the IPM walk on a daily basis. I think of these people as our partners, and DPR does its best work when we encourage and support them."

REWARDING INNOVATORS

For 15 years, DPR has encouraged IPM – integrated pest management – as a way to reduce pesticide risks by emphasizing natural pest solutions and promoting healthier, self-sustaining environments on the farm and in urban settings. Toward that goal, the Department created its IPM Innovator Awards to highlight success stories and encourage more groups to join the cause.

Winners for 2007 and 2008:

- Almond Pest Management Alliance Team, Butte, Stanislaus and Kern counties
- Breyer's Vineyard IPM Service, Sonoma County
- City of Santa Barbara Parks and Recreation Department
- EcoWise Certified Structural IPM Certification Program, Oakland
- Los Angeles Unified School District
- Locke Ranch, Inc., San Joaquin County
- Sacramento-Yolo Mosquito & Vector Control District, Sacramento
- San Diego Healthy Garden-Healthy Home Program
- City of Davis IPM Program
- FreshSense LLC, Parlier
- Pestec, San Francisco
- Santa Clara Valley Urban Runoff Pollution Prevention Program, Santa Clara County

More than 100 Innovators have been recognized since the awards began. Many of them also have participated in DPR pest management grant projects that focus on reducing risks. That's no coincidence.

"These programs mean more to DPR than good public relations – they're valuable because they set the right tone for progressive pest management," said DPR Director Mary-Ann Warmerdam. "DPR is the enforcement authority for pesticides, but we also see our role as encouraging the regulated community to voluntarily adopt 'greener' practices. That in turn promotes collaboration over conflict between industry and government, while providing more incentive for farmers and others who want to do the right thing."

"Hundreds of successful IPM programs – ranging from city and county governments to school districts and a museum to private landscaping and gardening operations – have quietly sown the seeds of urban environmental progress throughout California," Warmerdam said. "These voluntary projects have succeeded because they provide cost-effective pest management solutions without layers of government regulation. IPM 'brings home the green' in a way that meets our environmental and economic goals."



◀ DPR Director Mary-Ann Warmerdam holds the “Green Apple Award.” With her are School IPM staff members, Sewell Simmons and Ann Hanger. School IPM staff not pictured were Tom Babb, Madeline Brattesani, Nita Davidson, Nan Gorder, Belinda Messenger, Lisa Ross, Mary Votaw and Angelica Welsh.

▼ Nita Davidson, a DPR environmental scientist, points out DPR’s touchscreen kiosk in the Cal/EPA building lobby.

SCHOOL IPM WINS TWO AWARDS, PROTECTS KIDS IN CHILD CARE AND CLASSROOMS

The Department received two statewide environmental awards for our school IPM program in 2008. In April, the Green California Summit presented us with a Leadership Award. In September, we were honored with a “Green Apple Award” from the Collaborative for High Performance Schools, which recognizes major environmental accomplishments in school policy and “green” school facilities. DPR was cited for changing the way that schools confront pest management problems and improving the indoor environment of existing schools.

Several efforts highlight our work to protect children and promote IPM education. In 2007, a new law gave parents the right to know when pesticides are used in private child day care centers (except family-run care homes). Assembly Bill 2865 affects some 14,000 private child day care operations, as well as hundreds of pest control businesses that serve them. Commercial child day care providers now must provide pre-application pesticide notices on request and post areas to be treated.

In 2008, DPR staff revised its school IPM fact sheets on common school pests to better help the child care audience, and we began distributing these materials in English and Spanish. A child day care page also has been added to our extensive School IPM Web resource. It includes a list of pesticides outlawed for use at schools and day care centers in 2009.

Since 2002, DPR has conducted 27 school IPM training workshops across the state and reached 70 percent of California school districts. In 2007, we surveyed schools to gauge statewide compliance and IPM adoption to better focus our continuing outreach efforts. We plan a follow-up survey in 2010. Meanwhile, we’ve developed a school IPM display booth to show how better design of buildings and grounds can help prevent pest infestations.



CLICK FOR HELP ON PEST SOLUTIONS

DPR partnered with the University of California to develop IPM kiosks with interactive touchscreen computers that answer pest-related questions and then print out information. DPR funded eight kiosks that UC takes to nurseries, public buildings and even street fairs. DPR bought another three kiosks and designed an exhibit to house them. One is in the Cal/EPA building lobby, the second will tour other state buildings in Sacramento and the third goes on the road.